

1. The Earth–Our Living Planet

Exercises

1 A. Question

Fill in the blanks with suitable answer:

The total geographical area of the Earth is _____ Sq. Kms.

Answer

The total geographical area of the Earth is 510 million Sq. Kms.

Amongst the 510 million Sq. kms, 361 million Sq. Kms. (70.78%) is covered by water whereas 149 million Sq. Kms. (29.22%) is covered by land.

This aspect is responsible for an uneven distribution of land and water on the Earth, the ratio between the land and water bodies being 1:2.43.

1 B. Question

Fill in the blanks with suitable answer:

The shape of the Earth is _____.

Answer

The shape of the Earth is Geoid.

Referring to the shape of the Earth as Geoid, it basically implies 'Earth Shaped' or 'Oblate spheroid'. The Earth is flattened at the poles and bulges at the Equator.

1 C. Question

Fill in the blanks with suitable answer:

The equatorial and polar diameters of the Earth are _____ and _____ Kms.

Answer

The equatorial and polar diameters of the Earth are 12756 and 12714 Kms.

The measurements of the Earth's surface such as the diameters and circumferences of the equator and polar regions are the reasons explaining the Geoid shape of the Earth.

1 D. Question

Fill in the blanks with suitable answer:

The $23\frac{1}{2}^{\circ}$ North latitude is called as _____.

Answer

The $23\frac{1}{2}$ degree North latitude is called as Tropic of Cancer.

Latitude is an imaginary line which joins all places, having the same angular distance, both north and south of the equator.

1 E. Question

Fill in the blanks with suitable answer:

The Indian Standard Time is based on _____ longitude.

Answer

The Indian Standard Time is based on $82\frac{1}{2}$ degree longitude.

Longitude is an imaginary line intersecting the equator at a right angle, joining both the north and the south. On the globe, one can see them as a series of semi-circles running from pole to pole, passing through the equator.

The relation between longitude and time – Longitudes (also called Meridians) are of equal length. The Meridian passing through Greenwich (England) is the Prime Meridian. Therefore, there are 180 longitudes to the East of Greenwich and 180 to the West, taking the total to 360 longitudes.

2 A. Question

Why is the Earth called 'Living Planet'?

Answer

The Earth is called a 'Living Planet' due to its certain features:

- It is the home of all forms of life such as plants, animals, and human beings because of its appropriate location from the Sun.
- The range and variation in temperature are also viable to support life system on the Earth.
- The atmosphere and life supporting gases such as oxygen and its availability are also of significant importance on the Earth.
- The importance of 'water cycle' that helps in bringing rains and altering seasons has a very important role in the survival of different forms of life on Earth.

2 B. Question

Why are the Northern and Southern hemispheres called Land and Water Hemispheres?

Answer

The Land and Water bodies are unevenly distributed on Earth's surface. This can be justified because the Northern hemisphere has 60% of land and 40% of water. Whereas, the Southern hemisphere has 81% of water and 19% of land. Therefore, the Northern hemisphere is known as the 'Land Hemisphere' and the Southern hemisphere is known as the 'Water hemisphere.'

2 C. Question

What are latitudes and longitudes?

Answer

Since the Earth is spherical in shape, it is difficult to locate locations and places. Therefore, in order to understand the relations between different places and their exact location, there is a need to understand their position, their distance from any fixed point including their exact direction. Thus, a network of lines are drawn on the globe to know their position, distance and direction i.e. east, west, north or south. These imaginary lines are known as longitudes and latitudes.

Latitude - It is an imaginary line (horizontal lines) which joins all places, having the same angular distance, both north and south of the equator.

Longitude - It is an imaginary line (vertical lines) intersecting the equator at the right angle, joining both the north and the south.

2 D. Question

Mention the difference between local time and standard time.

Answer

Serial no.	Local Time	Standard Time
1.	It is the time according to the longitude of a place or the position of the Sun at that particular place.	It is the uniform time which is followed throughout a country.
2.	It is limited to a particular region because places are situated on different meridians.	It is not limited because it is the same to be followed by all the places of a country in order to avoid confusion at different places.
3.	It changes with the position of the longitude	It does not change with the position of the longitude.

2 E. Question

What is the International Date Line?

Answer

International Date Line is a line passing through 180° meridian diametrically opposite to the Greenwich Mean Time (GMT). It was adopted to overcome the

problems faced by circumnavigators in keeping the track of correct date and day of the week when travelling. It is supposed to pass the Pacific Ocean along the 180° meridian but makes short detours in order to avoid land masses.

3. Question

Define the following:

1. Unique planet 4. Continents
2. Size of the Earth 5. Prime Meridian
3. Geoid 6. Indian Standard Time

Answer

1. Unique planet – The Earth has been described as the ‘Unique planet’ or the ‘Living planet’ due to its life supporting features such as its appropriate location from the Sun, the presence of life supporting gases and the water cycle.

2. Size of the Earth – The Earth is the fifth largest planet in the Sun’s family with a diameter approximately 4 times greater than the Moon, being around 107 times less than that of the Sun.

3. Geoid – Geoid refers to the shape of the Earth, literally meaning Earth shaped or Oblate spheroid. The measurement of the Equatorial and the Polar diameter and the Equatorial and the Polar circumferences, accompanied by the difference between the diameters is the proof for the Geoid shape of the Earth.

4. Continents – The land bodies of the Earth are known as Continents. These are land masses of large size, comprising of seven continents in all. The seven continents are – Asia, Europe, Africa, North America, South America, Antarctica, and Australia. Among these, Asia is the largest continent whereas Australia is the smallest continent.

5. Prime Meridian – The Meridian (longitude) passing through Greenwich (England) has been chosen as the Prime Meridian which serves as the primary factor dividing Eastern and Western Hemisphere.

6. Indian Standard Time – The Standard Time refers to the uniform time based on the central meridian of a country or the meridian on which the most important city is located. In India, 82 1/2 degree East longitude is considered as the Standard Meridian of the country. It passes through Allahabad of Uttar Pradesh and the time based on this meridian is called the Indian Standard Time (IST). Indian standard time is 5 and half hour ahead of coordinated universal time (UTC).

4. Question

Terms to Remember:

1. Living Planet 4. Antarctic Circle
2. Equator 5. Zonal Time
3. Arctic Circle 6. International Date Line

Answer

1. Living Planet – The Earth has been described as the ‘Unique planet’ or the ‘Living planet’ due to its life-supporting features such as its appropriate location from the Sun, the presence of life-supporting gases and the water cycle.
2. The Equator – It is the longest line of the latitude known as the Great Circle.
3. Arctic Circle – The 66 1/2 degree North latitude is known as the Arctic Circle.
4. Antarctic Circle – The 66 1/2 degree South latitude is known as the Antarctic Circle.
5. Zonal Time – In countries where the longitudinal extent is large often there is a difference of three to four hours. In such places, the land surface is divided into times zones, each zone differing (in time) from the other.
6. International Date Line – International Date Line is a line passing through 180° meridian diametrically opposite to the Greenwich Mean Time (GMT). It was adopted to overcome the problems faced by circumnavigators in keeping the track of correct date and day of the week when traveling. It is known as the International Date Line because the date and day are changed whenever people cross these lines by ships or airplanes.

5. Question

List out the countries of the Eastern hemisphere and Western hemisphere on the basis of longitudes.

Answer

Eastern Hemisphere	Western Hemisphere
Russia	Countries in Africa – Morocco, Liberia etc.
India	Mexico
Germany	Canada
China	Countries in Europe – Iceland, Republic of Ireland, Portugal etc.
Japan	United Kingdom

NOTE – The above mentioned countries are only some examples. For more information, students can refer to the atlas or check the information available online.